

REMARKS

Reconsideration of the present application is requested.

The presently claimed invention relates to an extruded profiled element based on a cross-linkable rubber composition which, in the cross-linked condition, constitutes a tire tread. In order to enable an electrostatic charge on the tire to be discharged, for reasons explained in detail in the background of the present application, it is known to provide an electrically conductive arrangement in the profiled element which interconnects radially inner and outer faces of the profiled element (e.g., see Japan '519 of record). The conductive arrangement can comprise electrically conductive layers defined by generally concentric (coaxial) turns extending around the axis of symmetry of the profiled element, with one of the layers emerging at the outer face. By permitting electrostatic discharge, the reception quality of on board radios and the reliability of other on-board electrical devices can be improved. However, prior discharge techniques have not been as effective as would be desired, in reducing electrical interference perceivable in the amplitude modulation mode of the radio receiver when traveling over electrically conductive road elements under certain meteorological conditions.

However, a significant improvement in that regard is achieved by the presently claimed invention (see paragraph 0020 of the specification) by maximizing the number of turns i.e., 30 to 70 turns, of the electrical conductor to produce a behavior analogous to that of electrical capacitors which are composed of superimposed conductive and non-conductive layers. A capacitor's conductive layers, whether continuous or discontinuous, function to accumulate an electric charge under the effect of an electrostatic field and permit a discharge thereof.

Importantly, a capacitor functions to prevent violent discharges and to minimize the power of the discharge.

In the case of a tire tread of the type in question, i.e., having an electrostatic discharge conductor, it has been found that by minimizing the distance between successive conductive turns, a "capacitor effect" can be produced, i.e., preventing violent discharges and minimizing the power of the discharge, which is particularly effective in reducing interference perceivable in the amplitude modulation of radio receivers when traveling over electrically conductive road elements, e.g., metal parts of a bridge, manhole covers, or train tracks. That is accomplished in accordance with the present invention by employing an exceptionally large number of conductive turns, i.e. 30 to 70, as previously recited in original claim 7 and now recited in claim 23.

That concept and its attendant advantages are not made evident or obvious from Japan '519 which does not disclose anywhere near the large number of turns as presently claimed. At paragraph no. 23 of the English translation included with that reference in the Official action, it is mentioned "at least two" or "4 or more" or "still more preferably three or more" or "more preferably two or more" when describing the number of turns. Although the expression "or more" is used, it is clear from the recitation of the small numbers 2, 3 and 4 that one skilled in the art would not find it obvious to employ as many as 30 or more turns, especially since there is no indication from Japan '519 that any advantages, such as a capacitor-like effect can be produced.

Accordingly, it is submitted that claim 19 and dependent claims 24-34 distinguish patentably over Japan '519.

Claim 19 also distinguishes over Delorme(U.S. 2,174,779) in view of Johnson (U.S. 2,138,378) for similar reasons. Fig. 15 of Delorme shows 3 turns. Neither patent discloses the provision of the presently claimed large number of turns.

It is also noted that dependent claim 28 recites that the mass fraction of the insulating material is equal to or greater than 80% of the mass of the profiled element, and the mass fraction of the conducting arrangement is less than or equal to 20% of the mass of the profiled element (see paragraph 0054 of the original description). That feature enables the thickness of the large number of conductive turns to be minimized so that the turns can be distributed uniformly in the transverse (radial) direction of the profiled element.

Please note that new dependent claims 24-27 and 29-34 are based upon original claims 3-6, 8-11, 17 and 18, respectively.

In light of the foregoing, it is submitted that the application is in condition for allowance.

Respectfully submitted,

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